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School Housing Needs in City-School Systems, 1947–48

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FOREWORD

ONE OF the critical problems in American education is that of providing satisfactory school housing. Already this is a problem of serious proportions, and unless it is approached with realism and determination, school housing shortages during the next few years may greatly impair the efficiency of the nation's schools.

Two major factors contribute to the needs which now exist or are in immediate prospect. First, there is an accumulation of unmet needs because of curtailed school building activities for nearly a score of years. During the depression of the 1930's and the war years which followed, school house construction was limited, in most instances, to projects that were absolutely necessary. In both old and new buildings overcrowded conditions and other unsatisfactory arrangements were allowed to persist with the expectation that they could be corrected shortly, upon the return of more "normal" times. Second, a wave of greatly increased enrolments has begun to surge thru the schools as a result of the unprecedented rise in birth rate which began in the early years of World War II.

Today, in addition to the lag of wartime construction and increased enrolments the problem is still further complicated by high building costs, which make school authorities—to say nothing of the tax-reductionist groups that are found in most communities—reluctant to construct the buildings that are urgently needed.

This issue of the RESEARCH BULLETIN portrays some of the school housing needs of city-school systems. Contrary to an opinion widely held, many cities are hard pressed financially to maintain their schools during the present period of mounting prices and are finding it extremely hard to extend and improve their school plants in proportion to their growing needs.

It is hoped that this study, based on reports from approximately 1600 of the nation's cities, will help to define and underscore the general problem of school housing which must be faced and solved. The needs herein outlined are unmistakably real and urgent. Moreover, it should be kept in mind that this is a partial report of a much larger problem—an understatement of the total needs—since it includes data for only about half the nation's cities and covers none of the school housing needs of rural school systems. Awareness of these additional shortages gives added weight and meaning to the facts that are here presented.

Educational and lay leaders everywhere need to devote their best efforts to the problem of providing satisfactory school housing. Ways must be developed to finance the needed school buildings thru the combined use of local, state, and federal funds. Every day of postponement adds to the overcrowding, the abbreviated half-day sessions, and all the other consequences of improper school housing which daily are taking an unfortunate toll from American schools.

WILLARD E. GIVENS, *Executive Secretary,*
National Education Association

I. Introduction

Because of many known instances of serious school housing shortages in city-school systems, the present study was launched to discover how general the problem really is, how serious it has become, and what progress is being made in solving it. The questionnaires from which the data for the study were obtained were distributed to superintendents of schools in all city systems in communities above 2500 in population. The facts presented relate to the school housing situation as reported by 1600 of these superintendents on or about January 10, 1948.

Since not all the city systems are represented in the replies, this report is necessarily incomplete. It includes various percents of the city systems of different sizes, in total, somewhat less than half of the nation's city systems. As is usually true for such studies, the *percent* of return is highest for the larger cities but the *number* of replies is highest for the smaller ones. As Table 1 indicates, in columns 5 and 6, the distribution of replies from cities of the various population groups and regions is roughly similar to the distribution of all city-school systems in the various groups and regions.

On both counts, namely, the size and representativeness of the sample, the facts as reported in this bulletin should be quite reliable in indicating the school housing needs of city-school systems.

For the most part, the data are presented by city size, inasmuch as important differences for communities of different sizes were soon apparent. Regional tabulations also were made, and when important regional differences have been discovered, these, too, are pointed out either in the tables or text of the report.

The major indications of need considered in this study are: (a) the age of school buildings, (b) overcrowded conditions, (c) half-day sessions, or double use of the same plant facilities, (d) the use of what is here called "makeshift housing arrangements," (e) the amount of school construction under way or under contract, and (f) the amount of construction reported as urgently needed, over and above the work currently being done.

TABLE 1.—NUMBER AND PERCENT OF REPLIES BY CITY SIZE AND REGION

Population group and geographic region	Total number of city systems in the group[a]	Reports received		Percent of the total represented by each group	
		Number	Percent	All city systems	Those reporting
1	2	3	4	5	6
Over 100,000	92	68	74%	3%	4%
30,000–99,999	268	164	61	7	10
10,000–29,999	778	383	49	20	24
5,000–9,999	1,050	457	44	28	29
2,500–4,999	1,608	528	33	42	33
New England[b]	368	117	32	10	7
Middle Atlantic[c]	824	374	45	22	23
Southeast[d]	654	154	24	17	10
Middle[e]	1,068	582	54	28	37
Southwest[f]	315	118	37	8	7
Northwest[g]	261	113	43	7	7
Far West[h]	306	142	46	8	9
All groups	3,796	1,600	42%	100%	100%

[a] The figures given in this column exceed the number of cities as reported in *Sixteenth Census* (1940) for the following reasons: (a) the inclusion of certain New England communities over 2500 in population which prior to 1930 had been classified as urban but which were transferred to rural in 1930; and (b) counting the number of school systems rather than the number of cities where dual systems are in operation. In all such cases, however, the 1940 Census population figures for the various cities rather than the population of the school districts were used in classifying.

[b] Includes: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

[c] Includes: Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, and West Virginia.

[d] Includes: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

[e] Includes: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

[f] Includes: Arizona, New Mexico, Oklahoma, and Texas.

[g] Includes: Colorado, Idaho, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming.

[h] Includes: California, Nevada, Oregon, and Washington.

II. Age of School Buildings

Altho the age of a school building is not an infallible index of its usefulness, it is true that buildings are subject to the ravages of time and that eventually they do become unsafe or unsuited to the purposes for which they were constructed. Furthermore, changes in the nature of the school program alone over several decades have been sufficient to make some school buildings quite obsolete, irrespective of their structural soundness. The ages of the school buildings now in use, therefore, are properly considered in any appraisal of the school housing situation in city-school systems.

It is not always easy to give the construction date of a school building, for it may well be true that it was built in units, or that one or more wings or additions have been attached to the original structure. In recognition of this fact, superintendents were asked in this study to classify each building "according to the date of construction of either (a) the entire building, or (b) the major unit of the building." They were asked NOT to give the construction dates of temporary and portable buildings—only those of the "permanent school buildings" in the district. From the reports received on this basis, the ages of the permanent school buildings now in use in city-school systems are those shown in Table 2.

At least one school building in every five now in use in the city-school systems cooperating in this study was constructed before the turn of the present century—approximately fifty or more years ago. Two percent of all those in use date back to 1870 or earlier, or almost back to the period of the War between the States. The percents are so nearly identical for cities of all the population groups that Table 2 gives only the regional comparisons, where some rather marked differences are shown. Fewer than 10 percent of the permanent buildings in the cities of the Southwest and Far West regions were erected before 1900. In New England, at the other extreme, 42 percent of the city-school buildings are of nineteenth century vintage. Conversely, cities of the Southwest and Far West regions, respectively, have the largest percents of new buildings and New England cities report the least construction, relatively, since 1930.

The final line in Table 2 affords an interesting comparison. These percents, based on reports from 163 cities over 30,000 in population, were obtained in 1934.[1] Construction during the past fifteen years has produced some minor shifts in the proportions, but has by no means eliminated the cities' "antique" school buildings.

[1] National Education Association. Research Division. "The Nation's School Building Needs." *Research Bulletin* 13: 13; January 1935.

TABLE 2.—NUMBER AND PERCENT OF SCHOOL BUILDINGS IN THE CITIES OF VARIOUS GEOGRAPHIC REGIONS BY DATE OF CONSTRUCTION, 1947–48

Geographic region[a]	Number of cities reporting	Number of permanent school buildings	Percent of school buildings constructed				
			Before 1870	1870–1899	1900–1929	1930–1939	1940 and since
1	2	3	4	5	6	7	8
New England	109	1,543	7%	35%	46%	10%	2%
Middle Atlantic	364	3,811	2	24	57	15	2
Southeast	145	1,515	2	9	65	18	6
Middle	554	4,307	2	26	57	12	3
Southwest	114	1,086	2	4	58	23	13
Northwest	110	879	1	21	61	13	4
Far West	127	1,369	*	3	59	28	10
All regions	1,523	14,510	2%	20%	57%	16%	5%
Percent of buildings, by age groups, in 163 cities in 1934	....	....	3%	28%	63%	6%	..

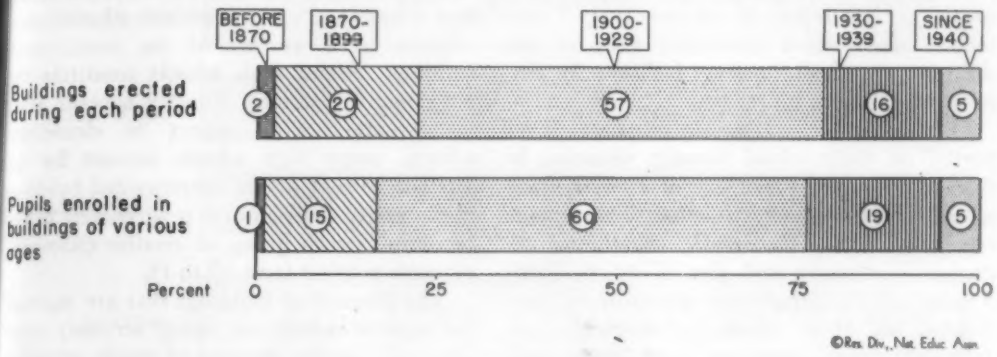
* Less than one-half of 1 percent.

[a] For the list of states included in each region see footnotes [b] thru [h] in Table 1.

The percent of pupils housed in school buildings of different ages runs very close to the percent of buildings in each group. This would seem to indicate that the older buildings are not greatly different in size from the newer ones. Such slight differences as do exist indicate that the newer buildings accommodate somewhat larger enrolments than do the older ones. Figure I compares the percent distribution of enrolment in buildings of various ages with the percent of buildings erected during each of the periods here considered.

FIGURE I

PERCENT OF SCHOOL BUILDINGS ERECTED AT DIFFERENT INTERVALS AND THE PERCENT OF PUPILS ENROLLED IN THEM



All of the factors having to do with the growth and development of the child, whether they be on the inside or on the outside, are fundamental in determining what kind of person the child is going to be. . . . When I go into an old drab building with its seats screwed down to the floor and with its natural dirtiness (not due to neglectful custodial service), I become depressed. How would you like to live in it day in and day out? If there is anything we have learned about the elementary school, it is that the situation in which the child lives has a great deal to do with how he is going to live, learn, develop, and grow up.—W. W. Wright, *Dean, School of Education, Indiana University.*

III. Overcrowded School Buildings

A second questionnaire item on school housing conditions asked superintendents of city schools to report the number of school buildings in their respective systems which they regarded as seriously overcrowded. The number of such buildings was reported separately for elementary schools, junior high schools, senior high schools, and schools of all other types.[1] In each case, too, the respondent gave the rated capacity of the building, or number of pupils that it should house, and in the adjoining column the actual 1947-48 enrolment to indicate the degree of overcrowding. These reports alone tell a convincing story of the shortage of school housing facilities in city systems.

Slightly more than half the cities which reported on their school housing situation in this study indicated that one or more of their schools is seriously overcrowded. The percent reporting such overcrowded conditions increases consistently with size of city, as Table 3 reveals. Cities that have overcrowded conditions in their elementary schools are relatively more numerous than those with overcrowded secondary schools, and proportionately more of them have overcrowded senior high schools than junior high schools.

Among the various geographic regions, overcrowding is present in the highest percent of cities in three regions, the Southeast, the Southwest, and the Far West.[2] Overcrowding is present in approximately 70 percent of the cities in all three regions. The lowest percent reporting overcrowded conditions in their schools is identified with cities of the Middle Atlantic region, and even there it is 35 percent.

From the data presented in graphic form in Figure II it will be noted that overcrowded elementary schools account for 73 percent of the total number of overcrowded buildings reported, the percents ranging from 63 in the smallest cities to 80 percent in the group over 100,000 in population. Junior high schools and schools of "other types"—that is, junior-senior high schools and other combined schools—each account for 7 percent of the overcrowded buildings. Senior high schools constitute the remaining 13 percent. Exactly opposite from the situation with respect to elementary schools, senior high schools account for the smallest percent of the overcrowded buildings in the larger cities and for progressively higher percents in each group of smaller cities—the percents ranging from 10 to 16.

The percents of buildings that are regarded by superintendents as being seriously overcrowded and the percents of pupils attending school in overcrowded buildings are shown in Table 4. The percents, on both counts, are highest for cities of smallest size. Similarly, on both the percent of overcrowded buildings and the percent of pupils housed in overcrowded schools, three regions again stand out: the Southeast, the Southwest, and the Far West.

Clear indication of the seriousness of over-

[1] Schools of "other types" include combined elementary and junior high schools, combined junior-senior high schools, and twelve-year schools.

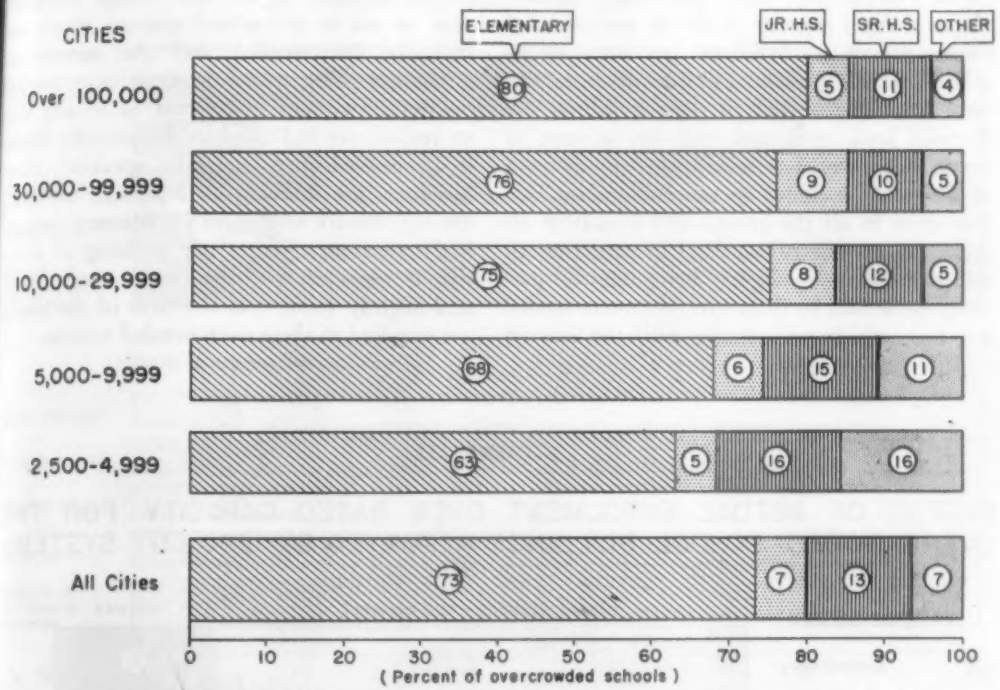
[2] For the regions used in this study, and the states included in each region, see Table 1, column 1, and footnotes [b] thru [h].

TABLE 3.—PERCENT OF CITIES IN WHICH AT LEAST PART OF THE SCHOOLS WERE SERIOUSLY OVERCROWDED, 1947-48

Population group	Percent of cities with one or more overcrowded schools	Percent of cities reporting overcrowded conditions in one or more			
		Elementary schools	Junior high schools	Senior high schools	Other types (combined junior-senior high schools, etc.)
1	2	3	4	5	6
Over 100,000	75%	71%	27%	34%	16%
30,000–99,999	62	50	16	24	11
10,000–29,999	52	42	12	19	8
5,000–9,999	47	36	7	16	11
2,500–4,999	46	35	4	14	12
All groups	51%	40%	9%	18%	11%

FIGURE II

PERCENT OF THE OVERCROWDED SCHOOLS THAT ARE OF EACH TYPE



Read chart as follows: In cities over 100,000 in population 80 percent of the overcrowded buildings are elementary schools, 5 percent are junior high schools, 11 percent are senior high schools, and 4 percent are schools of other types (combined types or special schools). Similarly read other bars.

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TABLE 4.—PERCENT OF BUILDINGS WHICH ARE OVERCROWDED AND PERCENT OF PUPILS ATTENDING OVERCROWDED SCHOOLS IN THE CITIES OF EACH REGION AND EACH POPULATION GROUP, 1947–48

Population group	Percent of buildings seriously overcrowded	Percent of pupils in overcrowded schools	Geographic region[a]	Percent of buildings seriously overcrowded	Percent of pupils in overcrowded schools
1	2	3	4	5	6
Over 100,000	12%	16%	New England	9%	9%
30,000–99,999	17	24	Middle Atlantic	9	14
10,000–29,999	20	27	Southeast	26	32
5,000–9,999	24	32	Middle	18	21
2,500–4,999	26	36	Southwest	29	39
			Northwest	18	25
			Far West	31	29
All groups				18%	22%

[a] For the list of states included in each region, see footnotes [b] thru [h] in Table 1.

crowded conditions in city schools is given in Figure III, which shows the excess of the actual total enrolment in overcrowded schools of each type over the accumulated total rated capacity of the same buildings. In other words, the total rated capacity of all the overcrowded elementary-school buildings has been determined and is represented as 100 percent. The total actual enrolment in these buildings has likewise been computed and the percent of excess enrolment determined, then the percent of difference is added to the 100-percent bar. For cities in all the groups and schools of all types the percent of overload in overcrowded school buildings is slightly more than 30 percent. According to these data, the overcrowded buildings which are operating with the heaviest overload are the schools of "other types"—that is, the combined junior-senior high schools and combined schools of all types. The lightest of the overloads is shown for junior high schools.

The percent of all the school buildings now in use in city-school systems which are seriously overcrowded and the percent of pupils attending school in these overcrowded buildings, without distinction as to city size or region, are indicated in Figure IV. When it is recalled that, generally speaking, these buildings are carrying a 30-percent overload, the significance of Figure IV becomes increasingly apparent. Nearly one building of every five is reported to be seriously overcrowded and slightly more than one-fifth of the pupils are enrolled in these overcrowded schools.

FIGURE III

EXCESS OF ACTUAL ENROLMENT OVER RATED CAPACITY FOR THE OVERCROWDED SCHOOL BUILDINGS REPORTED BY 1597 CITY SYSTEMS

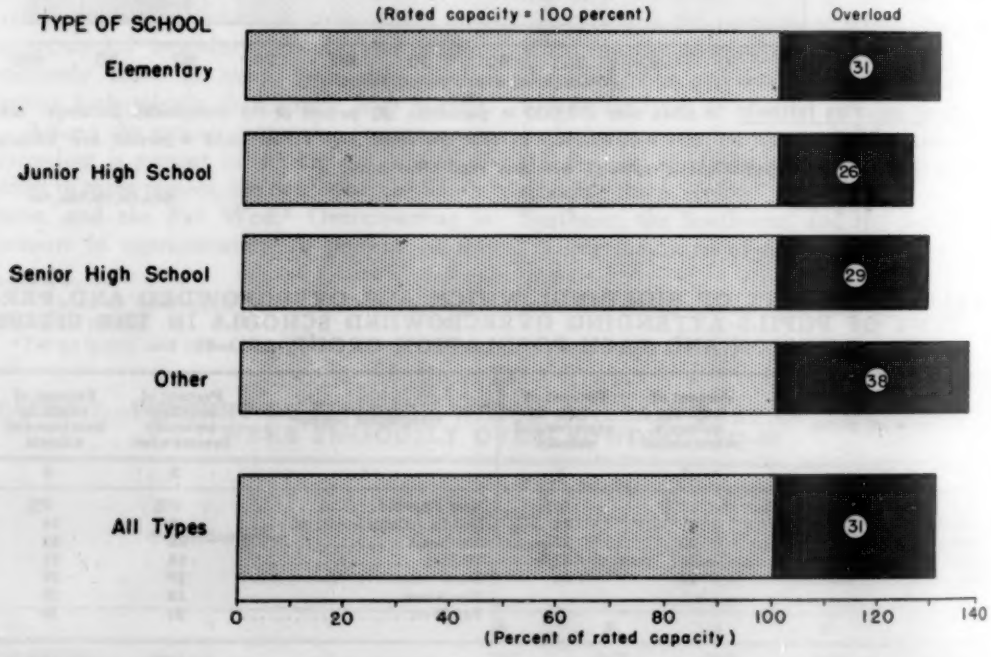
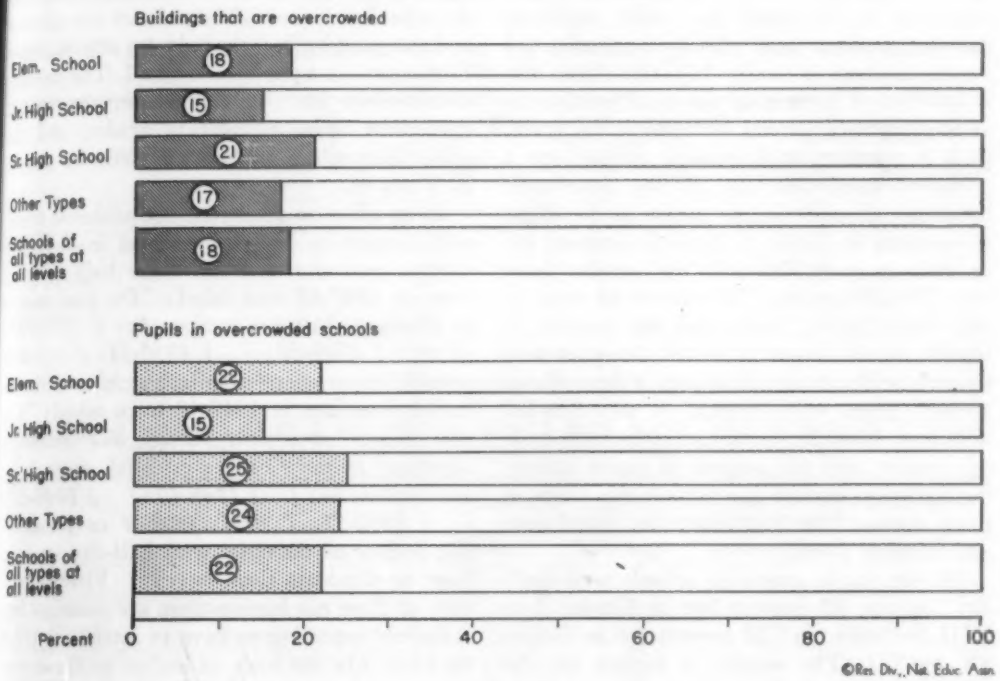


FIGURE IV

PERCENT OF CITY SCHOOLS OF EACH TYPE THAT ARE OVERCROWDED AND THE PERCENT OF PUPILS ATTENDING SCHOOL IN OVERCROWDED BUILDINGS



ONE OF the most misused slogans in educational management has been the old adage, so often false: "There's always room for one more." Following this pleasant delusion, far too many communities have let their schools grow until perhaps two thousand pupils are herded into buildings intended for half that number and until classes of forty to fifty are packed into classrooms designed for twenty to thirty pupils.—*The Expanding Role of Education,* Twenty-Sixth Yearbook, American Association of School Administrators, 1948. p. 267.

IV. Half-Day Sessions

An emergency arrangement to which some school systems are driven by lack of adequate school housing facilities is half-day sessions for part of the pupils. One city in ten of those participating in this study has some pupils on half-day sessions and the total number of pupils involved is nearly 125,000. Altho this is less than 2 percent of the total enrolments of the 1600 city systems included in this study, it is a number large enough to indicate a critical housing shortage. If the same ratio holds for all cities in the nation as for those represented in Table 5, half-day sessions are in effect in some 300 cities and involve more than 200,000 pupils. The percent of cities in this study having some half-day sessions is highest for the largest cities and decreases consistently with city size. Confirming the evidence already given with respect to overcrowded buildings, both the percent of cities with half-day sessions and the percent of pupils attending half-day sessions are highest for cities in three regions, the Southeast, the Southwest, and the Far West.[1]

Of the pupils attending schools with half-day sessions, 88 percent are in Grades I to VIII, inclusive, and 12 percent are in Grades IX to XII. The percent is highest for the first grade and decreases for each later grade as follows:

Grade	*Percent distribution of the pupils on half-day sessions*
I	37%
II	20
III	11
IV	7
V	5
VI	3
VII	3
VIII	2
IX to XII	12
	100%

The general pattern of grade distribution for the pupils attending half-day sessions is much the same for cities of various sizes. Certain regional differences, however, are quite pronounced, especially with respect to half-day sessions in the cities of New England, the Middle states, and the Northwest. Senior high-school students account for much higher percents of the half-day enrolments in New England and the Middle states than in the other regional groups. In the Northwest region, on the other hand, the high schools are not affected and the great bulk of the half-day attendants—77 percent—are pupils in Grade I. The percent distributions for the first grade, the second grade, the upper elementary grades, and the senior high-school period are given by region in Table 6.

In an effort to determine the probable trend with respect to half-day sessions in the near future, each city that had some half-day sessions in 1947-48 was asked: *"Do you expect to eliminate half-day sessions by: ( ) 1948-49; ( ) 1949-50; ( ) 1950-51; ( ) Impossible to predict."* Similarly, cities with no half-day sessions in 1947-48 were asked: *"Do you expect enrolment trends and building shortages to force you to establish some half-day sessions by: ( ) 1948-49; ( ) 1949-50; ( ) 1950-51; ( ) Impossible to predict."* Six percent of the cities with half-day sessions hope to eliminate them by 1951. Fifteen percent of those not having them are more or less definitely expecting to have to introduce them by 1951. On the basis of replies to these two questions the percents in Table 7 have been calculated. In interpreting them due allowance must be made for errors in prediction, of course. Some school systems that now believe they will have to resort to half-day sessions probably will find some way to avoid them. Other systems that now foresee no such emergency may find themselves confronted with it, and some that now hope to eliminate their half-day sessions may find it necessary to prolong them. But at least in the opinions of city-school administrators, half-day sessions are likely to be much more numerous by 1950-51 than they were in 1947-48—probably will be in operation in almost twice as many cities as during the past school year. Except for cities above 30,000 in population and for those in the Southeast region, all other groups anticipate a greater number of half-day programs rather than fewer. If the predictions of the respondents hold true from the 985 cooperating cities below 10,000 in population, the percent in

[1] For the regions used in this study, and the states included in each region, see Table 1, column 1, and footnotes [b] thru [h].

that group which will have half-day sessions in 1950-51 will be more than three times as high as the corresponding percent in 1947-48. In other words, in this group of 985 small cities, the number with half-day sessions probably will increase from the present 54 to about 175. Unless it can be demonstrated that half-day sessions are adequate from an educational point of view, the existing half-day programs and those that are anticipated during the next three years provide convincing evidence of a critical shortage in school housing facilities.

TABLE 5.—HALF-DAY SESSIONS, 1947-48, AS REPORTED BY 1600 CITY-SCHOOL SYSTEMS

Population group	Number of cities reporting	Cities which have some pupils attending half-day sessions		Pupils attending half-day sessions	
		Number	Percent	Number of pupils	Percent of total enrolment
1	2	3	4	5	6
Over 100,000	68	22	32%	46,506	1%
30,000–99,999	164	32	20	36,033	3
10,000–29,999	383	45	12	23,774	2
5,000–9,999	457	27	6	10,520	2
2,500–4,999	528	27	5	6,874	1
All groups	1,600	153	10%	123,707	2%

TABLE 6.—GRADE LEVELS AT WHICH HALF-DAY SESSIONS WERE IN OPERATION IN THE VARIOUS GEOGRAPHIC REGIONS, 1947–48

Geographic region[a]	Percent of the pupils who attend school on a half-day schedule that are identified with various grades			
	Grade I	Grade II	Grades III–VIII	Grades IX–XII
1	2	3	4	5
New England	10%	12%	9%	69%
Middle Atlantic	38	15	19	28
Southeast	39	24	37	*
Middle	14	11	27	48
Southwest	50	22	27	1
Northwest	77	12	11	0
Far West	33	24	38	5
All groups	37%	20%	31%	12%

* Less than one-half of 1 percent.

[a] For the list of states included in each region, see footnotes [b] thru [h] in Table 1.

TABLE 7.—PERCENT OF CITIES HAVING HALF-DAY SESSIONS, 1947-48, AND EXPECTING TO HAVE THEM IN THREE SUCCEEDING YEARS

Population group and geographic region	Number of cities reporting	Percent having some half-day sessions 1947–48	Percent expecting to have some half-day sessions		
			1948–49	1949–50	1950–51
1	2	3	4	5	6
Over 100,000	68	32%	32%	26%	25%
30,000–99,999	164	20	18	18	17
10,000–29,999	383	12	14	16	22
5,000–9,999	457	6	8	14	18
2,500–4,999	528	5	7	14	17
New England	117	9	17	20	24
Middle Atlantic	374	5	8	11	17
Southeast	154	31	23	24	23
Middle	582	3	6	12	16
Southwest	118	16	17	20	23
Northwest	113	4	4	7	10
Far West	142	25	28	32	32
All groups	1,600	10%	11%	15%	19%

V. Makeshift Housing Arrangements

In order to avoid excessive overcrowding and sometimes to avert the necessity of half-day sessions, many boards of education provide temporary housing arrangements. Usually these are admittedly unsatisfactory in character, but seem the best arrangements possible at the moment for temporary use. Among such makeshift arrangements, three types of emergency housing are quite common: (a) portable or other temporary buildings; (b) rented space in churches, halls, residences, and so on; and (c) continued use, on a temporary and special-permit basis, of obsolete buildings that have been officially condemned as unsafe, unsanitary, or otherwise unfit for use.

As is indicated in Table 8, each of these types of emergency school housing is in frequent use in city-school systems, especially in the largest ones. The more widespread use of portable and other temporary school buildings in the larger urban communities is especially noticeable, as is also the high percent of cities over 100,000 in population which rent some facilities for their schools. Approximately one city in four, at the time these reports were submitted in January 1948, was continuing to use one or more school buildings which had been officially condemned as unfit for school use. From the corresponding regional tabulations, which are not included in Table 8, the three regions that stand out are the same three which were cited earlier in connection with overcrowded schools and half-day sessions, namely, the Southeast, the Southwest, and the Far West. The percent of cities in each of these regions which makes some use of portables, rented buildings, and obsolete structures is much higher than the percent for all the cities—in some cases more than twice as large.

The number and percent of pupils attending at least part of their classes in the makeshift school buildings in use in the cities covered by this study are indicated in Table 9. There may be some overlapping in the data, where, for example, pupils at the secondary level or in departmentalized schools may attend part of their classes in a temporary building and other classes in some nearby rented building. Disregarding such cases—because their number probably is small—about 400,000 pupils in the cities reporting for this study are housed for at least part of the school day in temporary, rented, or obsolete school plants. If the same percents hold in all cities in the nation, the total number of such pupils for cities above 2500 in population would fall somewhere between 675,000 and 700,000. At first thought, the percent of pupils affected by makeshift school housing arrangements may seem relatively small—just over 5 percent. But when such conditions are viewed as merely another consequence of inadequate school housing to which must be added the overcrowded buildings and double-session programs reported earlier in this bulletin, the numbers, and even the small percents involved, become impressive.

The percents in Table 9 indicate that prolonged use of condemned buildings affects relatively more pupils in the smaller cities than in the larger ones. Portable and other temporary school structures, however, are used in the highest percent of cities, and house the highest percent of pupils, in communities over 100,000 in population.

TABLE 8.—PERCENT OF CITIES REPORTING SOME USE, IN 1947-48, OF TEMPORARY BUILDINGS, RENTED SPACE, AND BUILDINGS CONDEMNED AS OBSOLETE

Population group	Number of cities reporting	Percent of cities that make some use of		
		Portable or other temporary buildings	Rented buildings	Buildings condemned as obsolete
1	2	3	4	5
Over 100,000	68	66%	28%	25%
30,000–99,999	164	24	7	27
10,000–29,999	383	14	7	28
5,000–9,999	455	11	6	23
2,500–4,999	527	9	10	21
All groups	1,597	15%	9%	24%

Regional tabulations which are not included in Table 9 show that unusually large percents of the pupils are housed in temporary school buildings in the cities of three regions: 5 percent, in the Southeast; 4 percent, in the Southwest; and 9 percent, in the Far West—as compared with 2 percent for cities thruout the nation. Two-thirds to three-fourths of the school children housed in makeshift buildings are elementary-school pupils. The ratio of elementary- to secondary-school pupils for each of the three types of emergency housing with which this section deals is illustrated in Figure V. Apparently rented buildings are relatively more common than the other types of makeshift quarters for high-school purposes.

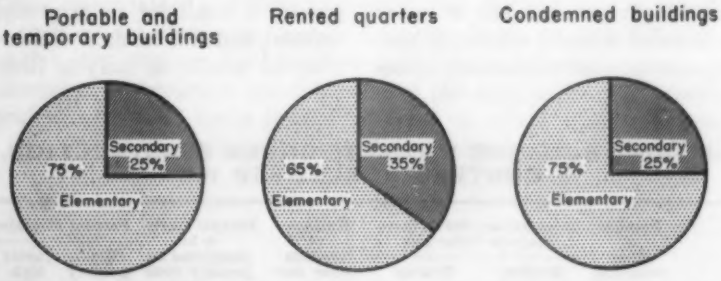
TABLE 9.—NUMBER AND PERCENT OF PUPILS ATTENDING AT LEAST PART OF THEIR CLASSES IN TEMPORARY BUILDINGS, RENTED QUARTERS, AND BUILDINGS OFFICIALLY CONDEMNED AS UNFIT FOR SCHOOL USE

Population group	Number of pupils housed in			Percent of total enrolment housed in		
	Temporary buildings	Rented quarters	Condemned buildings	Temporary buildings	Rented quarters	Condemned buildings
1	2	3	4	5	6	7
Over 100,000	116,922	6,792	38,902	3%	*	1%
30,000–99,999	17,132	1,877	45,572	1	*	4
10,000–29,999	16,864	3,052	56,799	2	*	5
5,000–9,999	15,185	3,166	40,003	2	1	6
2,500–4,999	6,080	4,246	35,391	1	1	7
All groups	172,183	19,133	216,667	2%	*	3%

* Less than one-half of 1 percent.

FIGURE V

PERCENT OF THE PUPILS HOUSED IN MAKESHIFT QUARTERS WHO ARE IN ELEMENTARY AND SECONDARY SCHOOLS, RESPECTIVELY



Read chart as follows: 75 percent of all the pupils housed in portable and other temporary school buildings are enrolled in elementary schools and 25 percent secondary schools. Similarly interpret the other two circles.

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VI. Current Building Activities

The school housing shortages just described would be much less serious if there were evidence that the needed facilities would soon become available. However, the amount of school building activity under way at the time of this inquiry is extremely small in view of current shortages and prospective growth in enrolments during at least the next decade.

Listed in columns 3 and 4 of Table 10 are the number and percent of cities having one or more building projects under way, or under contract, at the time the reports were submitted. Only 462 projects of all types are represented, including many additions to existing buildings as well as completely new school plants. More than three-fourths of the projects will provide housing for elementary-school pupils—the level at which the reported shortages are most acute—and 92 percent of the work under way or under contract is expected to be ready for use by January 1949. In the three geographic regions for which the most serious housing shortages have been noted, the amount of current construction activity is relatively high. In comparison with the 15 percent of all cities having projects under way, the percents for these regions are 22 percent for the Southeast, 37 percent for the Southwest, and 36 percent for the Far West.

Only 238 of the 1597 cities, a scant 15 percent of those reporting, had any school construction under way or under contract in January 1948. This was the situation in a group of cities in which more than one-fifth of the school buildings were erected prior to 1900, in cities of which 51 percent had one or more seriously overcrowded schools, where 24 percent were using one or more condemned school buildings on a special permit basis, 15 percent were using one or more portables, 9 percent were renting space for one or more school projects, and 10 percent had part of their pupils on half-day schedules.

The estimated total cost of the 462 projects under construction or under contract is $126,702,684—an average cost of a little less than $275,000 per project. The cost per pupil for all the projects (total cost divided by total rated capacity) is $802. When the projects are classified by type of school, the per-pupil costs run as follows:

Type of school	*Cost per pupil*
Elementary	$758
Junior high school	975
Senior high school	828
Other (combined) schools	894

The data contain no positive evidence as to why the per-pupil costs of the junior high-school projects run higher than those for other secondary schools. The most plausible explanation would seem to be that relatively more of the junior high-school projects consisted of completely new school plants, whereas many of the other secondary-school projects involved only the addition of wings or new units in established schools which already were equipped with some of the costly building facilities.

Table 11 is included to show the number of pupils, both actually and relatively, to be accommodated in the new structures reported as being under way or under contract. The percent is small for every group, as column 5 reveals; and the total, as shown in column 4, 158,062 pupils, is only a little larger than

TABLE 10.—SCHOOL BUILDING PROJECTS UNDER CONSTRUCTION, OR UNDER CONTRACT, DECEMBER 1947

Population group	Number of cities reporting	Cities having one or more projects under way		Number of projects under way	Percent likely to be completed by January 1949	Percent of projects by grade level			
		Number	Percent			Elementary	Junior high	Senior high	Other
1	2	3	4	5	6	7	8	9	10
Over 100,000	68	22	32%	120	93%	83%	7%	5%	5%
30,000–99,999	164	45	27	96	97	84	7	4	5
10,000–29,999	383	61	16	91	93	82	7	9	2
5,000–9,999	455	61	13	84	92	69	11	18	2
2,500–4,999	527	49	9	71	85	68	0	27	5
All groups	1,597	238	15%	462	92%	78%	7%	11%	4%

the number of pupils attending half-day sessions, 123,707 pupils. (See column 5 in Table 5.) The percent of elementary pupils to be housed by the projects under way is somewhat smaller than the percent of elementary-school projects, indicating that, in general, the high-school projects usually will house the larger enrolments.

TABLE 11.—ESTIMATED CAPACITY OF SCHOOL BUILDINGS UNDER CONSTRUCTION, OR UNDER CONTRACT, DECEMBER 1947

Population group	Number of cities reporting	Total enrolment	Rated capacity of buildings under construction	Percent that the capacity is of total enrolment	Percent of pupils to be accommodated in new buildings, by grade level			
					Elementary	Junior high	Senior high	Other
1	2	3	4	5	6	7	8	9
Over 100,000	68	4,080,483	58,924	1%	66%	16%	11%	7%
30,000–99,999	164	1,309,153	28,299	2	76	14	3	7
10,000–29,999	383	1,160,344	29,090	3	72	9	17	2
5,000–9,999	455	668,959	26,177	4	60	13	23	4
2,500–4,999	527	501,403	15,572	3	69	0	25	6
All groups	1,597	7,720,342	158,062	2%	68%	12%	14%	6%

MANY communities and cities have acted over the past year to rehabilitate their school plant—to improve existing schools or to build new ones. But in this area, progress has been slow and slight in relation to needs. Material shortages, construction restrictions, and the time required to secure the approval of new bond issues have all worked to retard school construction.

—Citizens Federal Committee on Education, 1947–48.

VII. Additional Needs Reported

How far the current program of school building construction falls short of meeting the cities' acute school housing shortages is apparent, first of all, from the fact that four cities out of every five listed one or more urgently needed school building projects for their respective school systems in addition to any that were under construction or under contract. Two-thirds of the cities reported a need for one or more elementary buildings; 40 percent a need for senior high schools; 22 percent a need for junior high schools; and 23 percent a need for "schools of other (combined and special) types." The fact that these percents total well above 100 reflects the needs of many cities for schools of more than one type. Consistent with the facts already reported on overcrowded conditions and half-day sessions, the percent of cities reporting urgent needs for additional school housing showed a small but regular increase with city size (from 77 up to 91 percent) and the highest percents for geographic regions were 93 for the Far West, 91 for the Southwest, and 84 for the Southeast.[1]

More specific information as to the number and type of projects still needed in the cities cooperating in this inquiry is given in Table 12—a total of 6937 projects or more than four per city. The proposed new projects amount to 45 percent of all the existing school buildings in the cities covered by the inquiry, and are more than half the number of existing school buildings in each of the two groups of cities below 10,000 in population.

This does not mean that the construction of these buildings would necessarily increase the pupil capacity by the percents shown in column 4 of Table 12, for in these calculations each project and each existing school counted "one" no matter how large or how small. Whether plant capacity would be increased more or less than these percents would depend on the size of the newly constructed buildings in relation to the size of those already in use. Two-thirds of the proposed projects are designated for use as elementary schools, 9 percent as junior high schools, 15 percent as senior high schools, and 8 percent as schools of other types. The percents identified with elementary schools increase with city size, and those identified with senior high schools run in reverse order. (See columns 5 and 7.)

The projects listed by cities in the three geographic regions having the most extensive school housing shortages bear higher ratios to the number of existing school buildings than any percent listed in column 4 of Table 12. They are as follows:

Region	*Percent projects would be of existing buildings*
Southeast	56%
Southwest	56
Far West	73

Three general categories of school construction projects were used by the respondents in reporting their housing needs: (a) new buildings, (b) additions, and (c) fundamental alter-

[1] For the regions used in this study, and the states included in each region, see Table 1, column 1, and footnotes [b] thru [h].

TABLE 12.—NUMBER AND PERCENT OF SCHOOL BUILDING PROJECTS LISTED AS URGENTLY NEEDED BY 1597 CITY SYSTEMS, JANUARY 1948

Population group	Number of cities reporting	Total number of projects needed	Percent projects would be of the number of existing buildings	Percent of proposed projects listed as			
				Elementary schools	Junior high schools	Senior high schools	Other types
1	2	3	4	5	6	7	8
Over 100,000	66	1,998	37%	76%	9%	12%	3%
30,000–99,999	163	1,325	44	72	13	11	4
10,000–29,999	383	1,483	48	69	9	14	8
5,000–9,999	457	1,143	54	61	7	20	12
2,500–4,999	528	988	54	49	7	26	18
All groups	1,597	6,937	45%	68%	9%	15%	8%

ation and modernization other than enlargement. Classified on this basis the 6937 projects indicated in Table 12 would be distributed as follows: (a) 36 percent, new buildings, (b) 32 percent, additions to existing school buildings, and (c) 32 percent, fundamental alteration and modernization other than enlargement. Analysis of the reports by city size shows somewhat higher percents of proposed new construction in the smaller cities than in the larger ones. On the contrary, higher percents of alteration and modernization projects are listed by the larger cities than by the smaller ones. In the case of proposed additions to existing school buildings, there was no apparent relation of the percents to city size.

A final look at the projects recommended, in relation to existing school plants, is afforded by Table 13. Here the percents are given for "each type" of proposed construction in relation to the total number of existing buildings, by city size and region. The trend toward relatively more new buildings in the smaller cities and more alteration and modernization in the larger ones is again apparent. Also, some rather wide variations will be noted among the regional groups, particularly for the three regions in which the school housing shortage in city systems seems most extensive.

To the extent that the construction needs which have just been reviewed are representative of city-school systems generally, the total needs for all city-school systems in the nation would be approximately 12,000 construction projects. These would include elementary schools, junior high schools, senior high schools, and combined and special schools of various types. Some would involve only the alteration or enlargement of existing schools, but the largest percent would be new buildings. If the average cost of each such project were the same as the average cost of the projects under construction or under contract in 1947-48, the outlay required would be about $1,500,000,000.

In comparison with other estimates of school housing needs which have been made during recent months these figures seem conservative rather than liberal. The United States Office of Education has estimated that, at the beginning of the year 1948, and assuming construction costs at the price level then in effect, about $6,600,000,000 would have been needed to provide adequate school housing facilities for all the nation's public elementary and secondary schools. Separate estimates are not reported for urban and rural school systems.[2] The Twenty-Sixth Yearbook Commission of the American Association of School Administrators, in its proposals for educational development, estimated that *an annual expenditure* of $1,250,000,000 should be made for school buildings during the next several years.[3] Thurston's 1947 estimate of needed expenditures on school housing for the nation was $6,000,000,000 on new construction and $2,000,000,000 to make existing buildings "absolutely safe. . . . (and) places of comfortable and efficient habitation."[4] An estimate by Lewis in 1944 called for the expenditure of $2,500,000,000 annually for five years on school buildings.[5] And finally, Cocking's estimate of the school building needs of city systems only in 1945 called for expenditures of $2,000,000,000.[6]

Apparently the reports from cities in this investigation included only the building projects which are regarded as virtually essential in the period immediately ahead. It is important to keep in mind in connection with these estimates, also, the fact that they pertain only to city systems in communities above 2500 in population—not to the total school housing needs of the nation.

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[2] *Nation's Schools* 41: 66; February 1948.

[3] American Association of School Administrators. *The Expanding Role of Education*. Twenty-Sixth Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1948. p. 276.

[4] Thurston, Lee M. "The Financing of School Building Construction." *Proceedings of the Sixteenth Annual Conference for Administrative Officers of Public and Private Schools*. Chicago: University of Chicago Press, 1947. p. 143-51.

[5] Lewis, John W. "Financing the Postwar Construction Program." *Bulletin of the School of Education, Indiana University* 20: 54-59; November 1944.

[6] Cocking, Walter D. "The Postwar Schoolhouse." *The American School and University*. New York: American School Publishing Corporation, 1945. p. 17-22.

TABLE 13.—PERCENT THAT THE PROPOSED PROJECTS WOULD BE OF EXISTING BUILDINGS

Population group and geographic region	Percent of existing buildings			
	Proposed new buildings	Proposed additions	Proposed alterations	All the projects
1	2	3	4	5
Over 100,000	9%	11%	17%	37%
30,000–99,999	16	14	13	44
10,000–29,999	18	17	14	48
5,000–9,999	24	17	13	54
2,500–4,999	24	17	13	54
New England	10	7	10	28
Middle Atlantic	12	7	12	31
Southeast	18	18	20	56
Middle	18	18	14	49
Southwest	18	19	19	56
Northwest	14	13	12	39
Far West	28	23	22	73
All groups	16%	14%	15%	45%

EXPECTED increases in school attendance in the next few years at public elementary and secondary schools and at colleges will be imposed on an already overloaded school plant. As a nation we have always prided ourselves upon the educational opportunities offered to our young people. It is a part of our national tradition, a manifestation of our standard of living. It is a tradition that must be continued due to the world situation, the rapidity of technological and scientific advancement, and to maintain and improve our cultural standards.—GEORGE H. FIELD, *Public Construction,* February 1948.

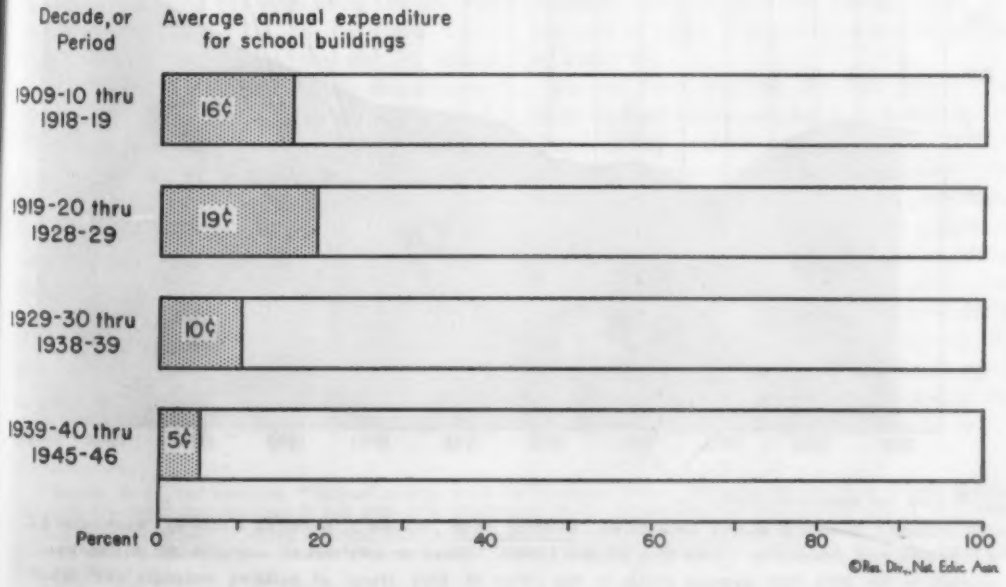
VIII. Construction Cost Trends

The critical shortage which now exists for school housing is, to a considerable degree, an accumulated shortage, due to the repeated postponements of needed school construction by the school systems of the nation. The sharp drop in school construction during the depression years of the 1930's has been pointed out in many publications, but the extent of this lag is not generally recognized. In the decade from 1909-10 thru 1918-19, capital outlay amounted to 16.1 percent of the total amount spent for public education in the United States. Also, in the next decade, 1919-20 thru 1928-29, the amount spent for buildings was 19.1 percent of the total. From 1929-30 thru 1938-39, however, only 9.8 percent of the total school expenditure was for capital outlay, and for the seven years 1939-40 thru 1945-46 only 4.9 percent was spent for school plant extension and improvement. With such a reduction in the percent of the school dollar being used for school housing in recent years, an accumulated shortage of facilities, such as this bulletin describes, was the inevitable result.

These figures, as given in Figure VI, are for the nation as a whole—not alone for city-school systems. Since there is reason to believe, however, that the general picture which they give applies in city-school systems no less than in rural areas, the school housing shortages described in earlier sections of this bulletin undoubtedly stem, in large measure, from this source. In one city, for example, which has grown from about 290,000 in population in 1930 to a present population of more than 365,000, only three new schools and three additions have been provided during the eighteen-year period. As a result the school authorities report that 20,000 pupils are without suitable school buildings, or without proper libraries, auditoriums, gymnasiums, playgrounds, or some combination of these. This is the record in a city widely regarded as one that maintains a good school system.

FIGURE VI

PERCENT OF THE SCHOOL DOLLAR USED FOR SCHOOL CONSTRUCTION IN RECENT DECADES

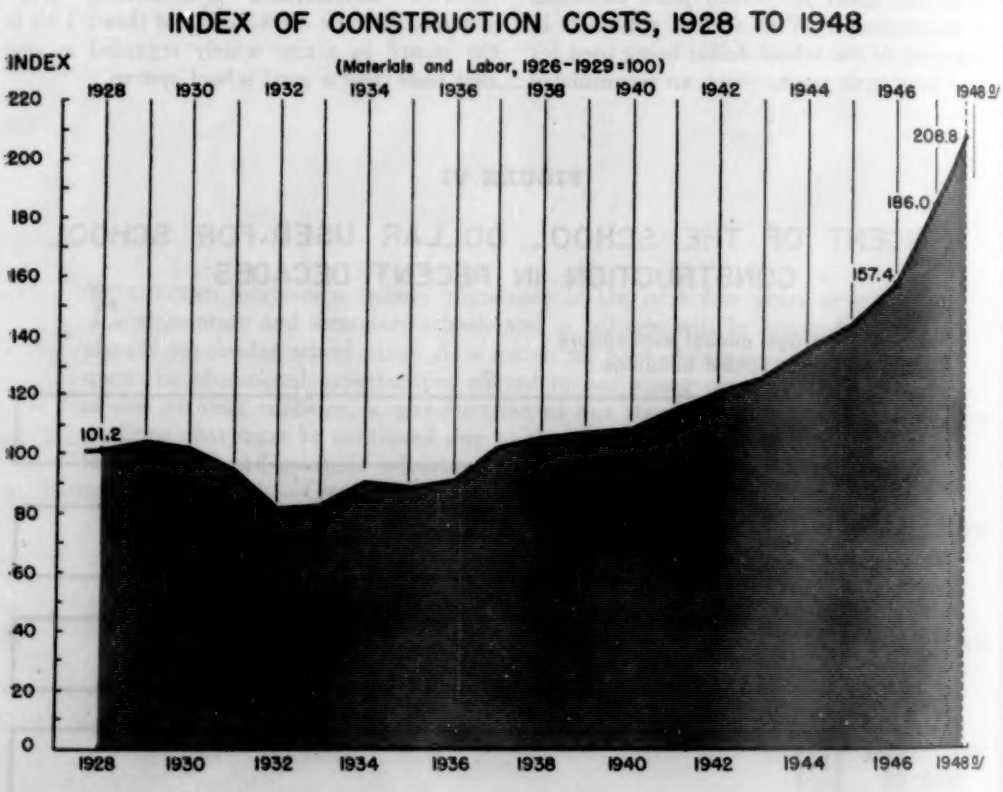


General Index of Building Costs

The present critical shortage of school housing facilities would be a problem of staggering size in any period. At a time of spiraling prices, it becomes much more difficult to solve. The amount of increase in school revenue during the war and postwar years has been quite moderate, usually reflecting only some slight increases in assessments, small increases in tax rates, or higher percents of tax collections. Increased costs of current operation, for the most part, have preempted all such gains. Nevertheless, the inflated costs which must be dealt with are just as real in the area of building construction as in the cost of current operations. With little or no recent increase in their financial resources, school systems must consider their urgent building needs with full knowledge that today's construction costs are higher than at any previous time. The increase, altho accelerated during the war years, has been especially rapid during the postwar period.

The relative cost of building construction during the past twenty years is shown in Figure VII. The index numbers on which this chart is based do not pertain exclusively to school buildings, but undoubtedly they do indicate with reasonable accuracy the way in which school building costs have fluctuated. The index was developed by pricing 600 items of building material and using labor costs in twenty building trades. Average costs of these items in 150 cities for the years 1926-1929 represent

FIGURE VII



1/ First ten months of 1948.

Source: Boeckh, E.H. and Associates Building Costs. Volume 5, Bulletins 6 thru 10. Washington D.C.: E.H Boeckh and Associates (June thru October), 1948. Based on construction costs in 20 cities as related to the 1926-1929 average prices in 150 cities of 600 items of building materials and labor costs in 20 building trades.

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100. Then, as the basis for the index numbers used in Figure VII, construction costs for buildings of all types combined in twenty large cities are set forth in relation to the 1926-1929 base.[1]

From 1928 to 1931, the index of building costs stood near 100. For the next five years the cost index was somewhat lower, falling at one time to 81.1. But in 1937, when the index again stood above 100, an upward climb was begun which now has carried it to above 200. In other words, it now costs more than twice as much, generally speaking, to construct a school building of a given size and type as it would have cost during the years 1926-1929. Moreover, these index numbers are based on current labor and material prices and do not take into account the cushion which contractors have recently been adding to their bids because of the uncertainty of the price structure. It is estimated that this cushion often ranges from 25 to 40 percent of contract bids.

An Index of School Building Costs

Since April 1947 the magazine, *School Executive,* has carried bimonthly reports on "School Building Costs and School Bond Rates," beginning with data for March 1946. Altho the source of the basic data is not indicated, the index numbers apparently are based specifically on the cost of materials and labor for school building projects, using the average costs during 1935-1939 to represent 100.[2] Figure VIII summarizes the rise in school building costs from August 1946 thru August 1948 above those of the prewar base period. The general similarity of the two series, that is, between Boeckh's and Clark's index numbers, in both size and direction of trend, adds to their significance and probable reliability. Clark's index is focused more sharply on school building construction costs.

It should be noted of course, that Figure VII gives the *annual* index over two decades, whereas Figure VIII presents the *monthly* index for only the past two years. Roughly speaking, the charts indicate that the materials and labor for a school building of a given size and type now cost over 85 percent more than they would have cost in 1939 and over twice as much as they would have cost a decade earlier. Clark points out the further total cost which is often involved, attributable to the contractor's cushion for the uncertainties of market conditions. When the index stood at 174, in April 1947, many contract bids were running 200 to 245 as compared with 1939 prices.

Cost, Per Cubic Foot, of Recent Projects

Limited amounts of cost data were provided by those who replied to the questionnaire on which this bulletin is chiefly based. Some respondents could give the total cost of the projects recently completed and the cubic content of these buildings. Others could give total cost and the number of square feet involved. Some could report only the cost and rated pupil capacity. Some of the projects are known to consist entirely of classrooms and connecting corridors—wings added to existing buildings. Others are known to include auditoriums, shops, libraries, gymnasiums, and/or other special rooms and facilities. Some failed to report in sufficient detail to indicate what was included. In spite of these and related difficulties, however, data are available on the cost per cubic foot of 126 school building projects that were completed, or for which contracts were let, between January 1947 and January of 1948. These data are summarized in Table 14.

As has been implied, the 126 projects include both additions and completely new school plants. They include a wide variety of construction types—frame, stucco, hollow tile, cinder block, concrete block, reinforced concrete, brick veneer, brick, stone, and numerous combinations of these materials. The majority, however, are brick, or brick in combination with one or more other types of material. By far the largest number are elementary schools, altho there are some junior high schools, some senior high schools, and several combined elementary and high schools among them.

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[1] Boeckh, E. H., and associates. "National Average Study by Occupancy Groups, 20 Major Pricing Areas, Boeckh Building Cost Index Numbers." *Building Costs* 5: 6-7; June 1948. Washington, D. C.: Boeckh and Associates (1406 M St., N. W.), 1948.

The twenty cities used as pricing areas are: Atlanta, Baltimore, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, and Seattle.

[2] The reports are prepared by Harold F. Clark, Economic Analyst, Teachers College, Columbia University. See: *School Executive* 66: 38; April 1947, and alternate issues thereafter to 68: 17; October 1948.

The range in cost is from 32 cents per cubic foot, for a frame building designed to house 500 pupils and built in a small city in a Southwestern state, to $2.50 per cubic foot, for a concrete and masonry building with complete facilities for 200 pupils. The latter was built in a rapidly growing metropolitan district in the Southeast region. Costs in the larger cities for masonry buildings typically run $1 or more per cubic foot, altho a few were reported at a lower cost.

There seems to be no marked difference in the cost of brick and steel construction as compared with concrete or with masonry buildings of blended materials. It is apparent, however, that—in spite of exceptions—projects using tile, cinder block, frame, and stucco tend to be somewhat less expensive than buildings of brick or concrete.

The median cost for the 126 projects is 86 cents per cubic foot. A third of them cost $1 or more; nearly a third, 75 cents to 99 cents; and a little more than a third, 32 cents to 74 cents. A rather typical project for this group is an elementary building constructed in a Southern city for 385 pupils at a cost of $241,600. This represented an expenditure of 87 cents per cubic foot; $12.97 per square foot of floor space; and $628 per pupil of rated capacity.

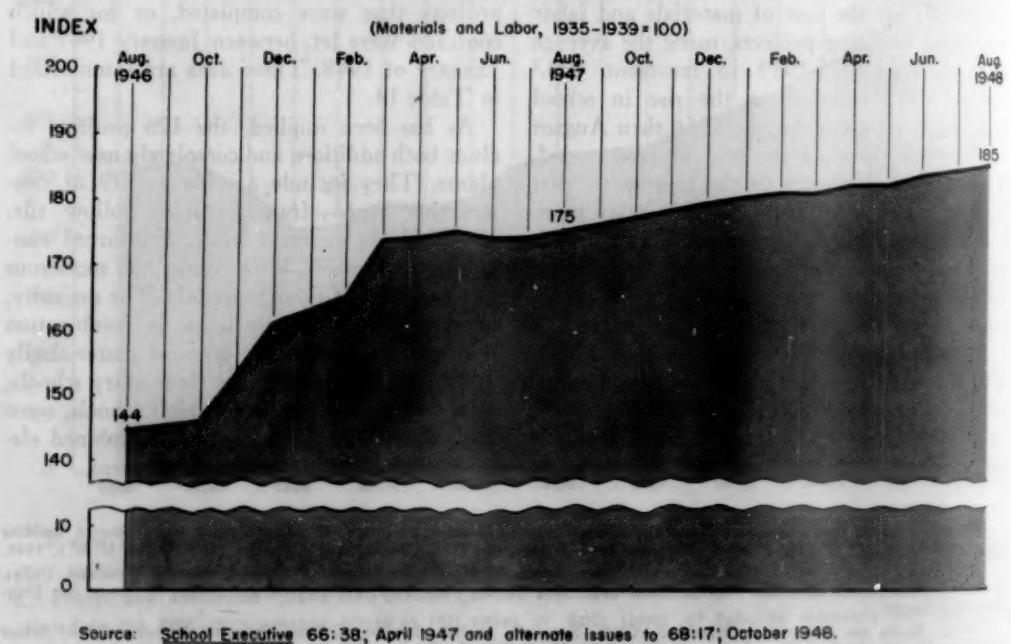
The cost figures here presented are by no means sufficient to serve as "standards." Rather, they are mere "straws in the wind." To estimate the cost of any proposed school building full account must be taken of the size and type of the structure, the materials to be used in its construction, its architectural design, and the local costs of building materials and labor.

TABLE 14.—COST PER CUBIC FOOT OF 126 RECENTLY COMPLETED SCHOOL BUILDING PROJECTS OF VARIOUS SIZES AND TYPES

Cost per cubic foot	Number of building projects	Percent of projects
1	2	3
$2.00 or more	2	2%
1.75–1.99	1	1
1.50–1.74	2	2
1.25–1.49	12	9
1.00–1.24	25	19
.75– .99	37	30
.50– .74	38	30
Below 50 cents	9	7
Total	126	100%
Median	86 cents per cubic foot	

FIGURE VIII

INDEX OF SCHOOL BUILDING COSTS, AUGUST 1946 THRU AUGUST 1948



Source: School Executive 66:38; April 1947 and alternate issues to 68:17; October 1948.

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IX. Summary and Conclusion

The facts presented in this bulletin make it unmistakably clear that a shortage of proper school housing in city-school systems is widespread and serious. A fifth of the buildings in use are fifty years old or more—2 percent of them eighty years old. More than half the nation's cities, if the data of this study are typical, have some schools that are overcrowded—accommodating, on the average, about 30 percent more pupils than these buildings were intended to serve. Such overcrowded conditions are especially frequent in elementary schools, and, generally speaking, are more common in the larger cities than in the smaller urban communities. One city in ten has such limited facilities that at least part of the pupils have only half-day sessions, an arrangement that strikes especially hard in first and second grades but, in the various school systems, reaches all grades and all levels. Moreover, if present trends continue, it is predicted that the number of cities having to resort to half-day sessions is likely to double during the next three years. In this case well over twice the present number of pupils are likely to be affected.

Portable or other temporary school buildings are in use in 15 percent of the nation's cities, and rented buildings (stores, churches, community halls, residences, and so on) in 9 percent. Twenty-four percent of the cities report that they are continuing to use, on a special-permit basis, at least one obsolete school building which has been officially condemned as unsafe, unsanitary, or otherwise unsuitable for school use.

To give a final overview of these conditions, expressed in terms of the percent of pupils affected, Figure IX is presented. In the same chart there are shown (a) the percent of pupils now improperly housed, and (b) the percent of pupils who soon will occupy the school buildings now under construction or under contract. As pointed out elsewhere in this bulletin, all the new buildings under way could accommodate only about as many pupils as are attending school on half-day sessions. If all were used to eliminate the half-day sessions this would leave wholly untouched the problem of overcrowded conditions, the use of temporary and rented buildings, the continued use of obsolete schoolhouses, and the problem of mounting enrolments which is becoming increasingly acute.

Detailed suggestions on how to cope with school housing shortages do not fall within the province of this bulletin. There can be no "stock solution" to such problems both because of their complexity and because, in every case, the problem and its solution are interwoven into the very fabric of the local situation. Nevertheless, a few general suggestions may be in place.

First, each community should make sure that it has accurate information as to just what additional school housing facilities it needs at the present time (and will need during the next few years) and when and where this additional housing must be provided. In this connection it should be kept in mind that a building program can be sound only when it is based on a considered educational program. Decisions as to type of organization and curriculum offerings are basic factors in determining needs.

Second, the people of the community should be told of these needs as clearly and as convincingly as possible. Public support of an extensive building program can be expected only when there is widespread community understanding of the needs and when the people themselves are given a share in the development of over-all plans for meeting them.

Third, priorities for the various projects should be established, and sites acquired as soon as possible for the construction projects that are most urgent. Architects should be engaged and preliminary sketches developed for the projects of top priority. Many communities have found such advance planning advantageous, even when the possibility of going ahead with the work at the time they were developing their plans seemed quite remote. With the first favorable turn of circumstances, they were ready to proceed. At the outset, in each instance, the school authorities should give the architect a specific list of the educational services to be rendered by the school he is asked to plan.

Fourth, local financial conditions should be thoroly and accurately explored to ascertain how far the community can go on its own resources in providing the school buildings that

it needs. This will include a study of the existing bonded debt, the safe limits of additional bonds for school building purposes, the legal limit for bonded debt—if one exists—as well as of the sources and rates of local taxes.

Fifth, the possibilities of obtaining state aid should be explored.[1] In instances where little or no state aid for school housing is yet available, many communities may need to exert their combined efforts to obtain increased state aid for school building purposes. Similarly, if federal aid for school construction should also become available—as is being advocated in some quarters—each community will want to find out how much aid it is entitled to receive from this source, and under what terms and conditions.

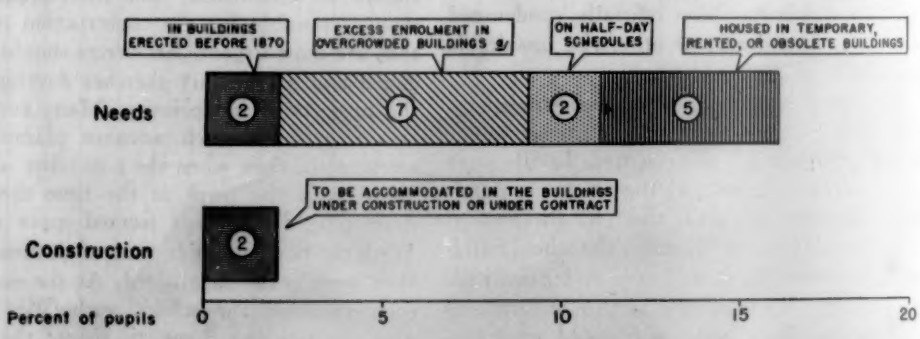
Finally, different styles of architecture and different types of construction should be carefully evaluated by the professional staff and by the board of education to make sure that new buildings are wisely planned first of all, in terms of their educational use, and next, in terms of the maximum economy. Such ideas, for example, as "transportable school units" may merit careful consideration in certain systems.[2] Important savings can often be effected by adopting some totally different design from that which the community has been using, by avoiding scarce materials as much as possible, and by other forms of careful planning.[3]

The school housing shortage which now exists did not originate overnight and cannot be immediately eliminated. It is the product of two decades of postponement and neglect, ushered in by a severe depression and prolonged by war. To solve the problem will require the best efforts of lay and professional leaders at local, state, and national levels over a period of several years. The point is that the accumulated shortage has now reached the danger point, where educational efficiency already is seriously impaired and at a time when a strong upsurge in school enrolments is being experienced. Further delay must not be permitted. Unless the problem is attacked immediately and with all possible vigor, in every community according to its needs, tremendous educational losses will occur.

[1] See: Hamon, Ray L. "State School Plant Assistance." *School Executive* 68: 48-50; November 1948.
[2] See: *School Executive* 67: 49; July 1948.
[3] A helpful source on school house planning will be available in February 1949: American Association of School Administrators. *American School Buildings.* Twenty-Seventh Yearbook. Washington, D. C.: the Association, a Department of the National Education Association, 1949. Approx. 548 p.

FIGURE IX

PERCENT OF PUPILS NOW IMPROPERLY HOUSED AND THE PERCENT FOR WHOM NEW BUILDINGS ARE IN IMMEDIATE PROSPECT



a/ Since 22 percent of the pupils are housed in buildings which, on the average, carry a 31-percent overload, the excess enrolment for whom additional housing is needed is approximately 7 percent.

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NEA Publications on Related Topics

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. *American School Buildings.* Twenty-Seventh Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1949. Approx. 548 p. $4. (At press)

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. *The Expanding Role of Education.* Twenty-Sixth Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1948. Chapter 11, "Suitable Plant and Equipment," p. 243-62 and Chapter 12, "Adequate Financial Support," p. 263-84. $3.

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION. "School Plant and Equipment." *Review of Educational Research* 18: 1-72; February 1948. $1.

NATIONAL EDUCATION ASSOCIATION, DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. "Elementary School Buildings." *The National Elementary Principal* 25: 1-52; April 1946. 35 cents.

NATIONAL EDUCATION ASSOCIATION, RESEARCH DIVISION. "The Nation's School Building Needs." *Research Bulletin* 13: 1-36; January 1935. 25 cents.

NATIONAL EDUCATION ASSOCIATION, RESEARCH DIVISION. "Proposals for Public Education in Postwar America." *Research Bulletin* 22: 37-88; April 1944. 25 cents.

Recent NEA RESEARCH BULLETINS

Local Education Associations at Work. October 1948, 40 p. 50 cents.

Statutory Bases of State Foundation Programs for Schools. April 1948, 60 p. 25 cents.

The Legal Status of the Public-School Pupil. February 1948, 40 p. 25 cents.

Statistics of State Progress in Public Education. December 1947, 64 p. 25 cents.

Address orders to the National Education Association.

A COMPETENT school administrator does not begin with a preconceived financial scheme and then attempt to fit his operational program to it. He first develops an educational plan and determines the facilities and services required by the plan. Compromises must often be made. Few school systems have the resources to provide the variety and quality of educational services that parents and teachers desire and that would be adequate for all pupil needs. But to approach an educational problem from a purely fiscal viewpoint is to put the cart before the horse. Such a procedure almost always results in educational stagnation. Schools are not operated to make money or to save money; they are institutions to serve children. Any administrative plan or procedure must be judged in terms of the extent to which it provides for the needs of children. School building programs are no exception to this general rule.—Raleigh W. Holmstedt in the *Proceedings of the Indiana and Midwest School Building Planning Conference*, September 1948.